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(FILE 'HOME' ENTERED AT 08:41:18 ON 05 AUG 2003)

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI, BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPY, DDFB, DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...' ENTERED AT 08:41:28 ON 05 AUG 2003

SEA OXIDASE OR OXYGENASE

18793 FILE ADISCTI
391 FILE ADISINSIGHT
525 FILE ADISNEWS
10137 FILE AGRICOLA
4084 FILE ANABSTR
2218 FILE AQUASCI
2492 FILE BIOBUSINESS
271 FILE BIOCOMMERCE
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6296 FILE BIOTECHABS
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17783 FILE CABA
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628 FILE CROPB
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186 FILE DRUGNL
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535 FILE EMBAL
66493 FILE EMBASE
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1215 FILE PROMT
49 FILE RDISCLOSURE
69665 FILE SCISEARCH
10 FILE SYNTHLINE
60292 FILE TOXCENTER
19973 FILE USPATFULL
594 FILE USPAT2
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6214 FILE WPIDS
6214 FILE WPIINDEX

L1 QUE OXIDASE OR OXYGENASE

FILE 'CAPLUS, BIOSIS, MEDLINE, SCISEARCH, EMBASE, TOXCENTER, PASCAL, BIOTECHNO, ESBIOBASE, USPATFULL' ENTERED AT 08:42:34 ON 05 AUG 2003

L2 4940 S L1 AND (PHENOL OXIDASE)
L3 278 S L2 AND (MUTANT OR VARIANT)
L4 11 S L3 AND (POSITION 254 OR 254)
L5 11 DUP REM L4 (0 DUPLICATES REMOVED)
L6 242 S L3 AND MUTANT
L7 149 DUP REM L6 (93 DUPLICATES REMOVED)
L8 17 S L7 AND STACHYBOTRYS

=> s l2 and precursor
L9 219 L2 AND PRECURSOR

=> d 19 ibib ab 219

L9 ANSWER 219 OF 219 USPATFULL on STN
ACCESSION NUMBER: 78:30579 USPATFULL
TITLE: Water-dispersible protein/polyurethane reaction product
INVENTOR(S): Hartdegen, Frank Joseph, Columbia, MD, United States
Swann, Wayne Elliott, Pasadena, MD, United States
PATENT ASSIGNEE(S): W. R. Grace & Co., New York, NY, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 4094744 | | 19780613 |
| APPLICATION INFO.: | US 1976-749430 | | 19761210 (5) |
| RELATED APPLN. INFO.: | Continuation-in-part of Ser. No. US 1976-743035, filed on 18 Nov 1976, now Defensive Publication No. which is a continuation-in-part of Ser. No. US 1976-660982, filed on 24 Feb 1976, now abandoned which is a continuation-in-part of Ser. No. US 1975-585674, filed on 10 Jun 1975, now abandoned | | |

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Naff, David M.
LEGAL REPRESENTATIVE: Pippenger, Philip M., McDowell, Jr., William W.
NUMBER OF CLAIMS: 19
EXEMPLARY CLAIM: 8,10
LINE COUNT: 965

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An aqueous dispersion of a biologically-active protein bound to polyurethane is formed by (a) admixing the protein and an isocyanate-capped liquid polyurethane prepolymer to form a solution; and (b) dispersing the solution in water.

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L1 QUE OXIDASE OR OXYGENASE

FILE 'CAPLUS, BIOSIS, MEDLINE, SCISEARCH, EMBASE, TOXCENTER, PASCAL, BIOTECHNO, ESBIOBASE, USPATFULL' ENTERED AT 08:42:34 ON 05 AUG 2003

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L8 17 S L7 AND STACHYBOTRYS
L9 219 S L2 AND PRECURSOR

=> s l2 and (muta?)
L10 303 L2 AND (MUTA?)

=> dup rem l10
PROCESSING COMPLETED FOR L10
L11 184 DUP REM L10 (119 DUPLICATES REMOVED)

=> d l11 ibib ab 180-184

L11 ANSWER 180 OF 184 MEDLINE on STN
ACCESSION NUMBER: 68202034 MEDLINE
DOCUMENT NUMBER: 68202034 PubMed ID: 4967267
TITLE: Phenol oxidase characteristics in mutants of Drosophila melanogaster.
AUTHOR: Mitchell H K; Weber U M; Schaar G
SOURCE: GENETICS, (1967 Oct) 57 (2) 357-68.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 196806
ENTRY DATE: Entered STN: 19900101
Last Updated on STN: 19900101
Entered Medline: 19680610

L11 ANSWER 181 OF 184 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1966:450167 CAPLUS
DOCUMENT NUMBER: 65:50167
ORIGINAL REFERENCE NO.: 65:9413b-c
TITLE: Phenol oxidases and Drosophila development
AUTHOR(S): Mitchell, Herschel K.
CORPORATE SOURCE: California Inst. of Technol., Pasadena
SOURCE: Journal of Insect Physiology (1966), 12(7), 755-65
CODEN: JIPHAF; ISSN: 0022-1910
DOCUMENT TYPE: Journal

LANGUAGE: English
AB cf. preceding abstr. Studies of **phenol oxidase** (I) activation at different stages of development in *D. melanogaster* have shown that max. activity is achieved in late 3rd-instar larvae. The straw⁵ mutant has at least as high a potential for **oxidase** production as the wild type and, in the **mutant**, the potential decreases much less during the period when melanization should occur. However, during this period the rate of I activation is much less in the **mutant**, a fact that can account for the pale bristle phenotype. Heat-induced blond phenocopies show activation behavior similar to that of the straw⁵ **mutant** and the results demonstrate the existence of a crit. sensitive period concerned with melanine production several hrs. before appearance of the pigment. In general, it appears that most of the I protein components are synthesized in the larvae and retained for use in melanine production some 3-4 days later. 16 references.

L11 ANSWER 182 OF 184 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 49
ACCESSION NUMBER: 1964:5466 CAPLUS
DOCUMENT NUMBER: 60:5466
ORIGINAL REFERENCE NO.: 60:987f-g
TITLE: The action of antiserums on the **phenol oxidases** of *Podospora anserina*
AUTHOR(S): Esser, Karl
CORPORATE SOURCE: Univ. Cologne-Lindenthal, Germany
SOURCE: Naturwissenschaften (1963), 50(7), 576-7
CODEN: NATWAY; ISSN: 0028-1042
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Enzyme preps. were partially purified by pptn. between 45 and 70% satd. (NH₄)₂SO₄ and were injected into rabbits over several weeks. In antibody tests the enzyme was pptd. but not inactivated. The enzyme was pptd. more rapidly than was the total protein. The antiserum contained 5.25 antienzyme units/ml. As only a single antigen-antienzyme system was concerned the method may be used to det. the specificity of **phenol oxidases** from wild and **mutant** strains of the organism.

L11 ANSWER 183 OF 184 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 1964:54703 CAPLUS
DOCUMENT NUMBER: 60:54703
ORIGINAL REFERENCE NO.: 60:9663e-h
TITLE: Tyrosine metabolism of insects. VIII. Sclerotization of cuticle in the wild strain and albino **mutant** of *Schistocerca gregaria*
AUTHOR(S): Karlson, P.; Schlossberger-Raecke, I.
CORPORATE SOURCE: Univ. Munich, Germany
SOURCE: Journal of Insect Physiology (1962), 8, 441-52
CODEN: JIPHAF; ISSN: 0022-1910
DOCUMENT TYPE: Journal
LANGUAGE: German
AB cf. CA 57, 14303h; 59, 6665e. The albino **mutant** of *S. gregaria* differs from the wild strain in having no melanin while the sclerotization of the cuticle is almost unaltered. However, the precursor of melanins and sclerotins is 3,4-dihydroxyphenylalanine (I). To det. differences in the tyrosine (II) metabolism of these 2 strains, 3-44 mg. DL-tyrosine-.alpha.-¹⁴C (sp. activity 0.5 mc./millimole) or DL-dihydroxyphenylalanine .alpha.-¹⁴C (sp. activity 0.5 mc./millimole) per animal was injected before the sclerotization. Animals were sacrificed either just before the formation of the cuticle or 3, 12, 24, or 48 hrs. later. The radioactivity of the cuticle and the body content was detd. sep. after the combustion to CO₂ and the pptn. of labeled BaCO₃. The **phenol oxidase** (III) activity was detd. by the following method. Each locust was homogenized with 3000 g. 5M pH 6.0 phosphate buffer, the mixt. was centrifuged 15 min., the ppt. dissolved in 41,000 g.

phosphate buffer, and centrifuged 2 hrs. An aliquot of 1.5 ml. supernatant and 1 mg. I or II in 0.5 ml. soln. was used for the manometric detn. of O₂. The body content of II was detd. by the method of Lugg (CA 31, 84443) after treatment with 4.2N HClO₄. The II metabolism of the **mutant** and the wild strain indicated that there were no qual. but only minor quant. differences in II content, III activity, and incorporation of radioactive precursors into the sclerotin of the cuticle. The **mutation** to albino influenced only processes in melanized parts of the cuticle, and the cuticle was not affected. Some observations on the incorporation of metabolites into the ecdysial membrane were reported and discussed. 20 references.

L11 ANSWER 184 OF 184 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1954:79627 CAPLUS

DOCUMENT NUMBER: 48:79627

ORIGINAL REFERENCE NO.: 48:14004i,14005a-b

TITLE: Blood **phenol oxidase** in *Bombyx mori*. III. A strain showing low enzyme activity

AUTHOR(S): Ito, Toshio

CORPORATE SOURCE: Sericult. Expt. Sta., Tokyo

SOURCE: Japan. J. Genet. (1954), 29, 43-8

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB The activity of **phenol oxidase** in a **mutant** strain (I) and normal one (II) were compared at the stages, 4th day in 4th-instar (III), 2nd day in 5th-instar (IV), 5th day in 5th-instar (V), late spinning period (VI), just after pupation (VII), and 5th day in pupa (VIII). In a manometric expt. when tyrosine was added, the O₂ uptake during III, IV, V, VI, VII, and VIII for the blood of I and II was 7, 27, 115, 147; 54, 134; 2, 48; 28, 125; and 3, 22; with catechol added 13, 66; 123, 158; 68, 119; 3, 76; 42, 130; and 3 .mu.l., and 53 .mu.l., resp. In a colorimetric expt., when tyrosine was added the optical d. during III, IV, V, VI, VII, and VIII for I and II was 0.47, 0.76; 0.69, 0.93; 0.75, 1.03; 0.48, 0.96; 0.85, 0.75; and 0.12, 0.26 and when catechol was added 0.43; 0.43; 0.40, 0.43; 0.39, 0.39; 0.42, 0.53; 0.56, 0.55; and 0.34, 0.64, resp.

=> log y

Crossover limits have been increased. See HELP CROSSOVER for details.

Calculated physical property data is now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:

<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> e phenol oxidizing enzyme/CN

E1 1 PHENOL OXIDASE INHIBITOR POI (32-TYROSINE) (HOUSEFLY) /CN
E2 1 PHENOL OXIDASE INHIBITOR POI (HOUSEFLY REDUCED) /CN
E3 0 --> PHENOL OXIDIZING ENZYME/CN
E4 1 PHENOL OXIDIZING ENZYME (STACHYBOTRYS CHARTARUM STRAIN MUCL 38898 GENE SPOB) /CN
E5 1 PHENOL POLYETHER WITH ETHYLENE OXIDE/CN
E6 1 PHENOL POLYETHER WITH PROPYLENE OXIDE/CN
E7 1 PHENOL POLYMER/CN
E8 1 PHENOL PROPIONATE/CN
E9 1 PHENOL PURPLE/CN
E10 1 PHENOL RADICAL CATION/CN
E11 1 PHENOL RADICAL CATION, MONOHYDRATE/CN
E12 1 PHENOL RADICAL MONOCATION/CN

=> s E4;D

L1 1 "PHENOL OXIDIZING ENZYME (STACHYBOTRYS CHARTARUM STRAIN MUCL 38898 GENE SPOB) "/CN

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2002 ACS
RN 315722-59-9 REGISTRY
CN Oxygenase, monophenol mono- (Stachybotrys chartarum strain MUCL 38898 gene spoB isoenzyme B) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 2: PN: US6168936 SEQID: 2 claimed protein
CN Phenol oxidizing enzyme (Stachybotrys chartarum strain MUCL 38898 gene spoB)
FS PROTEIN SEQUENCE
MF Unspecified
CI MAN
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

=> d 17 ibib ab 110-119

L7 ANSWER 110 OF 119 DGENE (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: ABB75759 Protein DGENE
TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal,
derived from a precursor enzyme of **Stachybotrys** -
INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M;
Toppozada A; De Vries C H; Wang H
PATENT ASSIGNEE: (UNIL)UNILEVER NV.
(UNIL) UNILEVER PLC.
(UNIL) HINDUSTAN LEVER LTD.
PATENT INFO: WO 2002020711 A2 20020314 52p
APPLICATION INFO: WO 2001-EP9928 20010824
PRIORITY INFO: EP 2000-203084 20000907
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2002-339800 [37]

AB The present sequence is the D562G **variant** of **Stachybotrys chartarum** MUCL 38898 phenol oxidase B. The **variant** was obtained using site-directed mutagenesis. Claimed detergent compositions of the invention comprise at least 1 surfactant and an enzymatically active **variant** of the phenol oxidase B enzyme, which may include the present amino acid substitution. The compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds. They are also useful for bleaching paper and pulp, in personal care products, foods, animal feeds, textiles, leather, contact lens cleaners, for starch production, for deodourisation, sanitation or waste-water treatment, as biocatalysts, in connection with biopolymers, packaging, adhesives or biosensors, in surface modification, in production of primary alcohols, and as antimicrobials. **Variant** enzymes may have increased phenol-oxidising activity at high pH compared with the parent enzyme, and especially have an optimum pH of at least 9. They may also show increased productivity, oxidative, thermal, alkaline, or proteolytic stability, different substrate specificity or different catalytic activity. Note: The present sequence is not shown in the specification, but is derived from the **Stachybotrys** wild-type phenol oxidase B sequence given in figure 2 (see ABB75754).

L7 ANSWER 111 OF 119 DGENE (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: ABB75758 Protein DGENE
TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal,
derived from a precursor enzyme of **Stachybotrys** -
INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M;
Toppozada A; De Vries C H; Wang H
PATENT ASSIGNEE: (UNIL)UNILEVER NV.
(UNIL) UNILEVER PLC.
(UNIL) HINDUSTAN LEVER LTD.
PATENT INFO: WO 2002020711 A2 20020314 52p
APPLICATION INFO: WO 2001-EP9928 20010824
PRIORITY INFO: EP 2000-203084 20000907
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2002-339800 [37]
AB The present sequence is the G115S **variant** of **Stachybotrys chartarum** MUCL 38898 phenol oxidase B. The **variant** was obtained using site-directed mutagenesis. Claimed detergent compositions of the invention comprise at least 1 surfactant and an enzymatically active **variant** of the phenol oxidase B enzyme, which may include the present amino acid substitution. The

compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds. They are also useful for bleaching paper and pulp, in personal care products, foods, animal feeds, textiles, leather, contact lens cleaners, for starch production, for deodourisation, sanitation or waste-water treatment, as biocatalysts, in connection with biopolymers, packaging, adhesives or biosensors, in surface modification, in production of primary alcohols, and as antimicrobials. **Variant** enzymes may have increased phenol-oxidising activity at high pH compared with the parent enzyme, and especially have an optimum pH of at least 9. They may also show increased productivity, oxidative, thermal, alkaline, or proteolytic stability, different substrate specificity or different catalytic activity. Note: The present sequence is not shown in the specification, but is derived from the **Stachybotrys** wild-type phenol oxidase B sequence given in figure 2 (see ABB75754).

L7 ANSWER 112 OF 119 DGENE (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: ABB75757 Protein DGENE
TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal, derived from a precursor enzyme of **Stachybotrys** -
INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M; Toppozada A; De Vries C H; Wang H
PATENT ASSIGNEE: (UNIL) UNILEVER NV.
(UNIL) UNILEVER PLC.
(UNIL) HINDUSTAN LEVER LTD.
PATENT INFO: WO 2002020711 A2 20020314 52p
APPLICATION INFO: WO 2001-EP9928 20010824
PRIORITY INFO: EP 2000-203084 20000907
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2002-339800 [37]

AB The present sequence is the N391S **variant** of **Stachybotrys chartarum** MUCL 38898 phenol oxidase B. The **variant** was obtained using site-directed mutagenesis. Claimed detergent compositions of the invention comprise at least 1 surfactant and an enzymatically active **variant** of the phenol oxidase B enzyme, which may include the present amino acid substitution. The compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds. They are also useful for bleaching paper and pulp, in personal care products, foods, animal feeds, textiles, leather, contact lens cleaners, for starch production, for deodourisation, sanitation or waste-water treatment, as biocatalysts, in connection with biopolymers, packaging, adhesives or biosensors, in surface modification, in production of primary alcohols, and as antimicrobials. **Variant** enzymes may have increased phenol-oxidising activity at high pH compared with the parent enzyme, and especially have an optimum pH of at least 9. They may also show increased productivity, oxidative, thermal, alkaline, or proteolytic stability, different substrate specificity or different catalytic activity. Note: The present sequence is not shown in the specification, but is derived from the **Stachybotrys** wild-type phenol oxidase B sequence given in figure 2 (see ABB75754).

L7 ANSWER 113 OF 119 DGENE (C) 2002 THOMSON DERWENT
ACCESSION NUMBER: ABB75756 Peptide DGENE
TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal, derived from a precursor enzyme of **Stachybotrys** -
INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M; Toppozada A; De Vries C H; Wang H
PATENT ASSIGNEE: (UNIL) UNILEVER NV.
(UNIL) UNILEVER PLC.
(UNIL) HINDUSTAN LEVER LTD.

PATENT INFO: WO 2002020711 A2 20020314
APPLICATION INFO: WO 2001-EP9928 20010824
PRIORITY INFO: EP 2000-203084 20000907
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2002-339800 [37]

52p

AB The present sequence is a peptide fragment of **Stachybotrys chartarum** MUCL 38898 phenol oxidase B, obtained by endoLysC digestion of the isolated enzyme. A degenerate PCR primer (see ABL53884) based on this peptide sequence was used to isolate the phenol oxidase B gene (see ABL53882). Claimed detergent compositions of the invention comprise at least 1 surfactant and an enzymatically active variant of a precursor phenol oxidising enzyme of **Stachybotrys** sp., such as the present phenol oxidase B enzyme and its variants (see ABB75757-ABB75866). The compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds.

L7 ANSWER 114 OF 119 DGENE (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: ABB75755 Peptide DGENE
TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal, derived from a precursor enzyme of **Stachybotrys** -
INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M; Toppozada A; De Vries C H; Wang H
PATENT ASSIGNEE: (UNIL) UNILEVER NV.
(UNIL) UNILEVER PLC.
(UNIL) HINDUSTAN LEVER LTD.
PATENT INFO: WO 2002020711 A2 20020314
APPLICATION INFO: WO 2001-EP9928 20010824
PRIORITY INFO: EP 2000-203084 20000907
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2002-339800 [37]

52p

AB The present sequence is a peptide fragment of **Stachybotrys chartarum** MUCL 38898 phenol oxidase B, obtained by endoLysC digestion of the isolated enzyme. A degenerate PCR primer (see ABL53883) based on this peptide sequence was used to isolate the phenol oxidase B gene (see ABL53882). Claimed detergent compositions of the invention comprise at least 1 surfactant and an enzymatically active variant of a precursor phenol oxidising enzyme of **Stachybotrys** sp., such as the present phenol oxidase B enzyme and its variants (see ABB75757-ABB75866). The compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds.

L7 ANSWER 115 OF 119 DGENE (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: ABB75754 Protein DGENE
TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal, derived from a precursor enzyme of **Stachybotrys** -
INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M; Toppozada A; De Vries C H; Wang H
PATENT ASSIGNEE: (UNIL) UNILEVER NV.
(UNIL) UNILEVER PLC.
(UNIL) HINDUSTAN LEVER LTD.
PATENT INFO: WO 2002020711 A2 20020314
APPLICATION INFO: WO 2001-EP9928 20010824
PRIORITY INFO: EP 2000-203084 20000907
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2002-339800 [37]

52p

AB The present sequence is the protein sequence of **Stachybotrys chartarum** MUCL 38898 phenol oxidase B. Claimed detergent compositions

comprise at least 1 surfactant and an enzymatically active variant of a precursor phenol oxidising enzyme of *Stachybotrys* sp., especially phenol oxidase B enzyme or its variants (see ABB75757-ABB75866). The compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds. They are also useful for bleaching paper and pulp, in personal care products, foods, animal feeds, textiles, leather, contact lens cleaners, for starch production, for deodourisation, sanitation or waste-water treatment, as biocatalysts, in connection with biopolymers, packaging, adhesives or biosensors, in surface modification, in production of primary alcohols, and as antimicrobials. The variant enzymes have increased phenol-oxidising activity at high pH compared with the parent enzyme, especially having an optimum pH of at least 9. They may also show increased productivity, oxidative, thermal, alkaline, or proteolytic stability, different substrate specificity and different catalytic activity.

L7 ANSWER 116 OF 119 DGENE (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: ABL53884 DNA DGENE

TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal, derived from a precursor enzyme of **Stachybotrys** -
INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M;
Toppozada A; De Vries C H; Wang H
PATENT ASSIGNEE: (UNIL) UNILEVER NV.
(UNIL) UNILEVER PLC.
(UNIL) HINDUSTAN LEVER LTD.

PATENT INFO: WO 2002020711 A2 20020314 52p

APPLICATION INFO: WO 2001-EP9928 20010824

PRIORITY INFO: EP 2000-203084 20000907

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2002-339800 [37]

AB The present sequence is a PCR primer based on an isolated peptide fragment (see ABB75756) of *Stachybotrys chartarum* MUCL 38898 phenol oxidase B. The primer was used in the PCR amplification of *S. chartarum* genomic DNA, isolating the phenol oxidase B gene, **spOB** (see ABL53882). Claimed detergent compositions of the invention comprise at least 1 surfactant and an enzymatically active variant of a precursor phenol oxidising enzyme of *Stachybotrys* sp., such as the present phenol oxidase B enzyme and its variants (see ABB75757-ABB75866). The compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds.

L7 ANSWER 117 OF 119 DGENE (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: ABL53883 DNA DGENE

TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal, derived from a precursor enzyme of **Stachybotrys** -
INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M;
Toppozada A; De Vries C H; Wang H
PATENT ASSIGNEE: (UNIL) UNILEVER NV.
(UNIL) UNILEVER PLC.
(UNIL) HINDUSTAN LEVER LTD.

PATENT INFO: WO 2002020711 A2 20020314 52p

APPLICATION INFO: WO 2001-EP9928 20010824

PRIORITY INFO: EP 2000-203084 20000907

DOCUMENT TYPE: Patent

LANGUAGE: English

OTHER SOURCE: 2002-339800 [37]

AB The present sequence is a PCR primer based on an isolated peptide fragment (see ABB75755) of *Stachybotrys chartarum* MUCL 38898

phenol oxidase B. The primer was used in the PCR amplification of *S. chartarum* genomic DNA, isolating the phenol oxidase B gene, *spoB* (see ABL53882). Claimed detergent compositions of the invention comprise at least 1 surfactant and an enzymatically active variant of a precursor phenol oxidising enzyme of *Stachybotrys* sp., such as the present phenol oxidase B enzyme and its variants (see ABB75757-ABB75866). The compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds.

L7 ANSWER 118 OF 119 DGENE (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: ABL53882 DNA DGENE

TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal, derived from a precursor enzyme of *Stachybotrys* -
INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M; Toppozada A; De Vries C H; Wang H
PATENT ASSIGNEE: (UNIL) UNILEVER NV.
(UNIL) UNILEVER PLC.
(UNIL) HINDUSTAN LEVER LTD.
PATENT INFO: WO 2002020711 A2 20020314
APPLICATION INFO: WO 2001-EP9928 20010824
PRIORITY INFO: EP 2000-203084 20000907
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2002-339800 [37]

52p

AB The present sequence is the *spoB* gene of *Stachybotrys chartarum* MUCL 38898, encoding phenol oxidase B (see ABB75754). The gene was obtained by PCR amplification of genomic DNA using degenerate primers (see ABL53883-84) based on isolated peptide fragments of the enzyme. Claimed detergent compositions of the invention comprise at least 1 surfactant and an enzymatically active variant of a precursor phenol oxidising enzyme of *Stachybotrys* sp., such as the phenol oxidase B enzyme or its variants (see ABB75757-ABB75866). The compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds. They are also useful for bleaching paper and pulp, in personal care products, foods, animal feeds, textiles, leather, contact lens cleaners, for starch production, for deodourisation, sanitation or waste-water treatment, as biocatalysts, in connection with biopolymers, packaging, adhesives or biosensors, in surface modification, in production of primary alcohols, and as antimicrobials. The variant enzymes have increased phenol-oxidising activity at high pH compared with the parent enzyme, especially having an optimum pH of at least 9. They may also show increased productivity, oxidative, thermal, alkaline, or proteolytic stability, different substrate specificity and different catalytic activity.

L7 ANSWER 119 OF 119 DGENE (C) 2002 THOMSON DERWENT

ACCESSION NUMBER: ABL53881 DNA DGENE

TITLE: Detergent composition containing **phenol-oxidizing enzyme**, useful for stain removal, derived from a precursor enzyme of *Stachybotrys* -
INVENTOR: Aehle W; Convents D; Doornink M; Van Gastel F; Rodriguez A M; Toppozada A; De Vries C H; Wang H
PATENT ASSIGNEE: (UNIL) UNILEVER NV.
(UNIL) UNILEVER PLC.
(UNIL) HINDUSTAN LEVER LTD.
PATENT INFO: WO 2002020711 A2 20020314
APPLICATION INFO: WO 2001-EP9928 20010824
PRIORITY INFO: EP 2000-203084 20000907
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2002-339800 [37]

52p

AB The present sequence is the **spoB** gene of **Stachybotrys chartarum** MUCL 38898, encoding phenol oxidase B (see ABB75754). The gene was obtained by PCR amplification of genomic DNA using degenerate primers (see ABL53883-84) based on isolated peptide fragments of the enzyme. Claimed detergent compositions of the invention comprise at least 1 surfactant and an enzymatically active **variant** of a precursor phenol oxidising enzyme of **Stachybotrys** sp., such as the phenol oxidase B enzyme or its **variants** (see ABB75757-ABB75866). The compositions are useful as laundry and dishwashing products, particularly for removing stains from fabrics, or generally to oxidise coloured compounds. They are also useful for bleaching paper and pulp, in personal care products, foods, animal feeds, textiles, leather, contact lens cleaners, for starch production, for deodourisation, sanitation or waste-water treatment, as biocatalysts, in connection with biopolymers, packaging, adhesives or biosensors, in surface modification, in production of primary alcohols, and as antimicrobials. The **variant** enzymes have increased phenol-oxidising activity at high pH compared with the parent enzyme, especially having an optimum pH of at least 9. They may also show increased productivity, oxidative, thermal, alkaline, or proteolytic stability, different substrate specificity and different catalytic activity.